REMARKS

Claims 1, 2, 4-8 and 10-30 are currently pending in this application. Applicant has withdrawn claims 24-30 from consideration in response to a restriction requirement and cancelled claim 3 and 9 without prejudice. Reconsideration is respectfully requested in light of the above claim amendments and the following remarks.

The Examiner rejected claims 1-2, 4-7, 9, 12-21 and 23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,487,752 to Salo et al. The Examiner also rejected claims 1, 4, 5-9 and 12-23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,643,327 to Dawson et al. Applicant respectfully traverses these rejections.

Applicant's claimed invention as recited in independent claim 1 is directed towards a method for identifying preferred control parameters for use in controlling an implantable cardiac stimulation device. For example, independent claim 1 recites a method comprised in part by delivering therapy to the heart of the patient during a series of consecutive evaluation periods less than about 12 seconds each in duration by alternating, from one evaluation period to another, between different sets of selected test control parameters and a set of reference control parameters and detecting values representative of transient cardiac performance corresponding to the different sets of control parameters during the evaluation periods. The recited method further comprises estimating optimal control parameters for maximizing cardiac performance based on a difference between the values representative of transient cardiac performance during each consecutive pair of evaluation periods.

(Underlining added for emphasis only). Applicant respectfully submits that Salo et al. do not disclose or suggest the recited claim elements.

Rather, Salo et al. disclose a method and apparatus for automatically optimizing a cardiac performance parameter of the heart by periodically pacing the heart for a short period of time with stimulating pulses having a modified pacing parameter value. The system of Salo et al. then determines the optimum pacing cycle parameter (A-V delay interval) as being that which yields the greatest cardiac output. (Salo et al., Abstract, col. 6, lines 2-4).

Salo et al. do not disclose or suggest estimating optimal control parameters for maximizing cardiac performance based on a difference between the values representative of transient cardiac performance during each consecutive pair of evaluation periods using reference control parameters and test control parameters as recited in the claimed invention. Accordingly, Applicant respectfully submits that claim 1 is novel and non-obvious over Salo et al. and is allowable. Applicant further submits that claims 2, 4-8 and 12-23 that depend from claim 1 are allowable as is claim 1 and for additional limitations recited therein.

Similarly, Dawson et al. disclose that a minimum paced depolarization integral (PDI) indicates a maximal stroke volume and so a maximal cardiac output for a given heart rate. Dawson et al. therefore adjust the A-V delay to provide the optimized volume parameter, i.e., minimum acceptable PDI value (Dawson et al., col. 2, lines 59-66).

In addition, the system of Dawson et al. delivers ventricular pacing pulse to the heart several times in a row using the same A-V delay and pacing rate for a period covering a respiration cycle. The system of Dawson et al. then averages the

resulting PDI parameters. Dawson et al. then repeat the measurements with the same A-V delay and rate for another three second period to obtain another averaged PDI measurement. The system of Dawson et al. then compares the two averaged PDI measurements to determine if the parameter is stable. If the measurements are not stable the results are discarded and the whole process is repeated.

Thus, Dawson et al. determine the difference between a PDI parameter during two evaluation periods to determine if the parameter is stable not to determine the optimum value of the pacing control parameters as recited in the claimed invention. Rather, Dawson et al. simply choose the parameters that provide the minimal value of the PDI. Moreover, Dawson et al. do not disclose or suggest alternating, from one evaluation period to another, between different sets of selected test control parameters and a set of reference control parameters and detecting values representative of transient cardiac performance as recited in the claimed invention.

For each of the foregoing reasons, Applicant respectfully submits that claim 1 is novel and non-obvious over Dawson et al. and is allowable. Applicant further submits that claims 4-8 and12-23, that depend from 1 are allowable as is claim 1 and for additional limitations recited therein.

In light of the above amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Pursuant to 37 C.F.R. 1.136(a)(3), Applicant hereby requests and authorizes the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that

requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 22-0265.

Respectfully submitted,

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